

I. Real Party in Interest

Orbis Patents Ltd. is the real party in interest, and is the assignee of Application No. 09/235,836, filed January 22, 1999, which is the parent application of the present divisional application.

II. Related Appeals and Interferences

The Appellants' legal representative, or assignee, does not know of any other appeal or interferences which will affect or be directly affected by or have bearing on the Board's decision in the pending appeal.

III. Status of Claims

Claims 1-15, 17-21 and 28-56 stand finally rejected and are the subject of this appeal. Claims 16 and 22-27 have been canceled.

IV. Status of Amendments

No amendments after final rejection have been filed.

V. Summary Claimed Subject Matter

The present invention, as generally described starting at line 24 of page 6 of Appellants' specification, is directed to a credit card system which has the added feature of providing additional limited use credit card numbers and/or cards. Limited use credit cards and/or numbers are used for a single transaction or multiple transactions reduce the potential for fraudulent reuse of these numbers and/or cards. Additionally, limited use credit card numbers have the same format of a master credit card number and are associated with the master credit card number in such a way that the master credit card number cannot be derived from the limited use credit card number.

The credit card system and methods set forth in the claims find application in

not only traditional "card present" transactions, but also in "card remote" transactions such as by mail, phone or Internet. The present invention also provides a card user with the functionality of a credit card without revealing the master credit card number during the course of a transaction. Additionally, the present invention reduces so-called "skimming" fraud in which a single use or limited use credit card is used for card present transactions and relevant information of the card is physically or electronically reproduced. (See the specification, page 2, lines 10-19.) The present invention also reduces occurrences or the effects of more general "compromised numbers" fraud in which credit card information is illegitimately obtained and used to fraudulently charge goods and services to the cardholder's credit card account. (See the specification, page 2, line 20 to page 3, line 5.) Other features of the present invention enhance existing credit card systems which will allow secure trade without the use of elaborate encryption techniques while providing a great deal of flexibility to the end user.

Various aspects of the invention are broadly encompassed by the appealed claims, which are now described:

A. Independent Claims 1, 14 and 15

Features of the present invention recited in independent claims 1, 14 and 15 include maintaining a pool of credit card numbers that share identical formatting, assigning at least one credit card number from the pool of credit card numbers to be a master credit card number, and assigning at least one credit card number from the pool of credit card numbers to be a limited-use credit card number. For instance, as shown in Figure 1 and described in the specification starting at line 24 of page 15, a processing station 120 has access to a database 124, which includes a subset of master credit card numbers and a subset of limited-use credit card numbers (item 126 in Figure 1). Page 21, lines 2-6 of the application describes generating credit card numbers conforming to the format for valid credit card numbers.

Claims 1, 14 and 15 also recite features directed to the concept of associating a limited-use credit card with limited-use conditions, which include permitting multiple uses of the limited use card number and a use-triggered condition. When the use-

triggered condition occurs, this event causes the deactivation of the limited-use credit card number. Exemplary limited-uses and use-triggered conditions are described at lines 8-14 of page 11, lines 1-17 of page 13, and page 14, lines 4-7 of the specification. It is to be noted that the exemplary limited uses and use-triggered conditions described in the specification allow for multiple uses of a limited-use card, but that it is possible that a use-triggered event to cause deactivation of such a limited-use card number on first use (e.g., it would be possible for deactivation to occur on a first-use of a multiple-use limited-use credit card if the transaction amount were to exceed a preset aggregate credit limit).

Claims 1, 14 and 15 also recite that the master credit card number is associated with the limited use credit card number, while assuring that the master credit card number cannot be discovered on the basis of said limited-use credit card number. For instance, the application describes a number of exemplary pseudo-random and random processes starting at line 10 of page 20 of the application, which may be used to associate a limited-use credit card number to a master credit card such that the master credit card number cannot be derived from associated limited-use credit card numbers.

Claim 1 recites a number of features in means plus function format as permitted by 35 U.S.C. §112, paragraph 6. The first such recitation is "means for maintaining a pool of credit card numbers which share identical formatting." An exemplary structure described in the specification as corresponding to this "maintaining" function is a database (e.g., see database 124/126 of Figure 1 and the description thereof at page 16, lines 23-24 and page 47, lines 4-5), and a central processing unit (CPU) (e.g., see item 120 of Figure 1) executing a software program. The CPU and the database operate based on instructions from a software program (see, page 16, lines 2-4).

Claim 1 also recites "means for assigning at least one credit card number from said pool of credit card numbers to be a master credit card number" and "means for assigning at least one credit card number from said pool of credit card numbers to be a limited-use credit card number." The structure described in the specification as corresponding to this "assigning" function is that of the CPU, discrete

logic component and/or other combination of logic components and computer implemented control (e.g., see page 16, lines 2-4, page 18, lines 7-20; page 20, lines 10-15; page 23, line 23 to page 24, line 3; page 27, lines 19-21 and page 47, lines 5-9).

The next recited features in the format provided by Section 112, paragraph 6 is “means for associating said at least one limited-use credit card number with limited-use conditions, said conditions including permitting multiple uses and a use-triggered condition, the occurrence of which causes deactivation of said limited-use credit card number.” Starting at line 27 on page 16, the application describes the structure corresponding to this “associating” function as a CPU 120, which can access conditions database 122 storing information regarding customers’ accounts, such as information regarding various conditions, which apply to each customer’s account. The database 122 stores a mapping between a customer’s master account credit card number and limited-use credit card numbers. Rather than separate databases 122 and 124/126, information regarding the limited use credit card can be stored with a field identifying the master credit card number and commingled in a common database with the conditions regarding its use, as described on page 17, at lines 4-9, or in a single list as described on page 44, line 19 to page 45, line 19.

The described structure of “means for associating said master credit card number with said limited-use credit card number, while ensuring that said master credit card number cannot be discovered on the basis of said limited-use credit card number” is software (see, page 16, lines 2-4 and page 45, lines 1-8) implemented by a CPU (e.g., see page 18, lines 7-10), microprocessor of the CPU, discrete logic components or a combination of discrete logic components and computer-implemented control (e.g., see page 18, lines 10-13). The means for associating may include a physical random system, such as a white noise generator, for example, or lists forming queues, as described starting at line 10 of page 20.

B. Independent Claim 17

Claim 17 is directed to a credit card system for performing a credit card transaction on the basis of either a limited-use credit card number or a master credit card number (e.g., see page 43, lines 3-10).

In the claim 17 system, the limited-use credit card number is randomly chosen with respect to the master credit card number, but the limited-use credit card number includes identical formatting to said master credit card number and is associated with said master credit card number (e.g., see page 20, line 18 to page 23, line 8; and page 26, lines 4-7).

The credit card system of claim 17 comprises “transaction means for entering a transaction on the basis of said master credit card number or said limited-use credit card number to generate a transaction message.” This is a means plus function recitation as permitted by 35 U.S.C. § 112, paragraph 6. Exemplary structures described in the specification as corresponding to this ‘entering’ function include card swipe unit 106, electronic device 104 and wireless device 140, as shown in Figure 1 and described on page 16, lines 8-21, a computer (e.g., on the Internet using a browser), telephone (e.g. phone/mail order), mobile telephone, portable computing device, laptop, palmtop, personal organizer or cable or television linked Internet access device, and associated software, as described starting on page 32, line 1.

Claim 17 recites “processing means for receiving said transaction message and processing said transaction.” This is a means plus function recitation as permitted by 35 U.S.C. § 112, paragraph 6. The structure described in the specification as corresponding to this ‘receiving’ function is the exemplary central processing unit 120, which interfaces with the remote units via network I/O unit 118, and which implements “processing software” for processing the transaction (see, Figure 1, page 16, lines 2-5, 18-19 and 22-23, and page 30, lines 26-27). Claim 17 further recites that the processing means includes “means for authorizing or denying said transaction” (e.g., see page 17, lines 10-14; page 17, lines 15-17; page 39, line 23 to page 40, line 9; page 41, and lines 4-14; page 43, lines 15-19; and page 44, lines 3-10), “means for determining whether to deactivate the limited-use credit card

number when said limited-use credit card number was used to perform the transaction, and for generating a deactivation command in response thereto, wherein said means for determining whether to deactivate the limited-use credit card number determines whether a use-triggered condition associated with permitted use of said limited-use credit card number has occurred, and if so, generates said deactivation command when said limited-use event has occurred, and if not, does not generate said deactivation command" (e.g., see page 8, lines 4-6; page 19, lines 5-9; page 40, lines 12-13; page 43, lines 23-24), and "means for deactivating the limited-use credit card number based on the deactivation command" (e.g., see page 8, lines 6-8; page 18, lines 9-11; page 41, line 21 to page 42, line 5; and page 43, lines 24-25).

C. Independent Claim 20

Claim 20 is directed to a method for performing a credit card transaction on the basis of either a limited-use credit card number or a master credit card number (e.g., see page 43, lines 3-10). The limited-use credit card number has no mathematical relationship with respect to with the master credit card number, but the limited use credit card number includes identical formatting to the master credit card number and is associated with said master credit card number (e.g., see page 9, lines 12-16, page 18, lines 22-25; page 20, line 15 to page 23, line 8; and page 26, lines 4-7).

The method of claim 20 includes a step of "entering a transaction on the basis of said master credit card number or said limited-use credit card number to generate a transaction message" (e.g., see Figure 1 and description on page 16, lines 8-21; page 33, lines 4-13; page 36, line 10 to page 37, line 8; page 39, lines 9-22; and page 43, lines 3-10).

The next recited step of claim 20 involves "receiving said transaction message and processing said transaction" (e.g., see, Figure 1, page 16, lines 2-5, 18-19 and 22-23, and page 30, lines 26-27). The step of receiving includes the steps of "authorizing or denying said transaction" (e.g., see page 17, lines 10-14; page 17, lines 15-17; page 39, line 23 to page 40, line 9; page 41, and lines 4-14; page 43, lines 15-19; and page 44, lines 3-10), "determining whether to deactivate the limited-

use credit card number when said limited-use credit card number was used to perform the transaction, and for generating a deactivation command in response thereto, wherein said means for determining whether to deactivate the limited-use credit card number determines whether a use-triggered condition associated with permitted use of said limited-use credit card number has occurred, and if so, generates said deactivation command when said limited-use event has occurred, and if not, does not generate said deactivation command" (e.g., see page 8, lines 4-6; page 19, lines 5-9; page 40, lines 12-13; page 43, lines 23-24), and "deactivating the limited-use credit card number based on the deactivation command" (e.g., see page 8, lines 6-8; page 18, lines 9-11; page 41, line 21 to page 42, line 5; and page 43, lines 24-25).

D. Independent Claim 21

Independent claim 21 is directed to a credit card system (e.g., see page 1, line 13-15 and the description starting at page 11, line 15). The recited system includes a database of credit card numbers which share identical formatting (e.g., see page 16, lines 23-26 and Figure 1, items 124 and 126; and page 21, lines 1-6). Claim 21 recites that the system includes a master credit card number selector that can select at least one credit card number from the database to be a master credit card number (e.g. see the central processing unit (CPU) 120 in Figure 1 and description at page 20, lines 14-15 and page 23, lines 23-24), and a limited-use credit card number selector that can select a least one credit card number from said database to be a limited-use credit card number that is deactivated upon a use-triggered condition subsequent (e.g., see page 11, lines 11-14, Figure 2 and page 12, line 6 to page 14, line 7). The claimed system also includes a credit card number processor (e.g., logic in CPU 120 described on page 18, lines 7-13) that can associate said master credit card number with said limited-use credit card number, while ensuring that said master credit card number cannot be discovered on the basis of said limited-use credit card number (e.g., see page 9, lines 12-16, page 18, lines 22-25; and Figure 4 and page 27, lines 19-21), and a credit card number distributor that can send the limited-use credit card number to a user associated with

said master credit card number (e.g., see Figures 1 and 5, page 17, line 14 to page 18, line 6 and page 28, line 25 to page 32, line 26).

Claim 21 also recites "means for receiving information from said user, said information specifying limited uses for the limited-use credit card number, said uses including said use-triggered condition." This is a means plus function recitation as permitted by 35 U.S.C. § 112, paragraph 6. The structures described in the specification as corresponding to this 'receiving' function are the exemplary I/O circuit 118 interfacing with devices 104, 108, and 140 as shown in Figure 1, a mail receiving part, a telephone call receiving device or system, or any other electronic devices which a user can utilize to contact the card issuer (e.g., see page 27, line 22 to page 28, line 1).

E. Independent Claims 39 and 45

Aspects of the invention recited in independent claims 39 and 45 include maintaining a pool of credit card numbers which share identical formatting (e.g., see page 16, lines 23-26 and Figure 1, items 124 and 126; and page 21, lines 1-6), assigning a number of said credit card numbers from said pool to be master credit card numbers, and assigning a number of said credit card numbers from said pool to be limited-use credit card numbers (e.g., see processing station 120 shown in Figure 1 and the description starting at line 24 of page 15, which has access to a database 124/126, which includes a subset of master credit card numbers and a subset of limited-use credit card numbers). Each of the limited-use credit card numbers are designated to be deactivated upon a use-triggered condition (e.g., see page 11, lines 8-14; page 12, line 6 to page 14, line 7, and the conditions database 122 of Figure 1).

Claims 39 and 45 also recite maintaining a first queue of the limited-use credit card numbers, each available for association with one of the assigned master credit card numbers (e.g., see page 20, line 24 and page 22, lines 15-20), maintaining a second queue containing assigned master credit card numbers requiring association with limited-use credit card numbers (e.g., see page 20, lines 18-19), and associating, for each master credit card number at the front of the second queue,

one or more limited-use credit card numbers from the first queue, wherein said one or more limited-use credit card numbers associated with a same master credit card at different times when the same master credit card number reaches the front of the second queue are random with respect to one another (e.g., see page 20, lines 19-27, page 22, lines 15-20 and page 23, lines 4-8).

Claim 39 recites a number of features in means plus function format as permitted by 35 U.S.C. §112, paragraph 6. The first such recitation is “means for maintaining a pool of credit card numbers which share identical formatting.” An exemplary structure described in the specification as corresponding to this “maintaining” function is the database labeled 124/126 in Figure 1 and described at page 16, lines 23-24 and at page 47, lines 4-5, accessible by a central processing unit (CPU) 120. The operation of the CPU 120 and the database 124/126 is carried out by a computer running a software program (page 16, lines 2-4).

The next recited features of claim 39 in means plus function format is “means for assigning a number credit card numbers from said pool to be master credit card numbers” and “means for assigning a number of said credit card numbers from said pool to be a limited-use credit card numbers, each of which are designated to be deactivated upon a use-triggered condition.” The structure described in the specification as corresponding to this “assigning” function is that of a processor (e.g. a CPU accessing a database of numbers as described starting at page 23, line 25 implementing a software program (e.g., see page 16, lines 2-4, page 18, lines 7-10 and 14-20; page 20, lines 10-15; page 23, line 23 to page 24, line 3; page 27, lines 19-21 and page 47, lines 5-9), a microprocessor of a CPU executing a function program, code or code segments (see, page 16, lines 2-4, and page 18, lines 7-9), a general purpose computer (page 18, lines 9-10), or discrete logic components or some combination of discrete logic components and computer-implemented control (see, page 18, lines 10-13).

Claim 39 also recites the following elements in means plus function format permitted by 35 U.S.C. §112, paragraph 6: “means for maintaining a first queue of the limited-use credit card numbers, each available for association with one of the assigned master credit card numbers,” “means for maintaining a second queue

containing assigned master credit card numbers requiring association with limited-use credit card numbers;" and "means for associating, for each master credit card number at the front of the second queue, one or more limited-use credit card numbers from the first queue, wherein said one or more limited-use credit card numbers associated with a same master credit card at different times when the same master credit card number reaches the front of the second queue are random with respect to one another." The structures relied upon for performing the "maintaining" and "associating" functions in the forgoing recitations is the CPU, microprocessor, general purpose computer executing code of a software program, or discrete logic components or some combination of discrete logic components and computer-implemented control, as pointed out above.

F. Independent Claim 51

The credit card system recited in claim 51 includes a database of credit card numbers which share identical formatting (e.g., see database 124/126 of Figure 1 and page 16, lines 24-26 and page 21 lines 1-6), a master credit card number assigner for assigning at least one credit card number from said database to be a master credit card number and a limited-use credit card number assigner for assigning a least one credit card number from said database to be a limited-use credit card number, which is designated to be limited to one or more limited uses (e.g., see the central processing unit (CPU) 120, page 16, lines 2-4, lines 23-26 of page 16, lines 24-28 of page 23, and lines 19-21 of page 27). The system further includes a credit card number processor (e.g., see CPU 120 of Figure 1 and the description at page 18, lines 7-13), which operates to associate the master credit card number with said limited-use credit card number, while ensuring that said master credit card number cannot be discovered on the basis of said limited-use credit card number (e.g., see page 9, lines 12-16, page 18, lines 22-25; and Figure 4 and page 27, lines 19-21), and a receiving unit, which operates to receive information from a user of said master credit card (e.g., see Figure 1, item 118, page 27, lines 22-23 and line 25 to page 28, line 1). The received information defines at least one limited use of said limited use credit card number, before the limited use

card number can be used in a transaction pertaining to the defined limited use (e.g., see page 27, line 22 to page 29, line 4, and Figure 4, steps 408-412).

VI. Grounds of Rejection to be Reviewed on Appeal

The grounds of rejection for review is the rejection of claims 1-15, 17-21 and 28-56 under 35 U.S.C. §103 as allegedly being unpatentable over Walker et al. (U.S. Patent No. 6,613,771) in view of Nakagawa (U.S. Patent No. 5,583,918).

VII. Argument

A. Independent Claims 1, 14, 15, 17 and 20 Recite A Common Distinction Not Taught or Suggested by the Walker et al. and Nakagawa Patents

Independent claim 1 recites, *inter alia*, means for associating at least one limited-use credit card number with limited-use conditions. The limited-use conditions include *permitting multiple uses*. Independent claims 14 and 15 also explicitly recite limited-use conditions that include permitting *multiple uses*. Similar distinctions are brought out in independent claims 17 and 20. For instance, claims 17 and 20 respectively recite a means for, and process of processing a transaction that includes determining whether a use-triggered condition has occurred, and generating a deactivation command if it has occurred, and *not* generating a deactivation command if the use-triggered condition has not occurred. Thus, the condition recited in claims 17 and 20 in which a determination is made that a use-triggered condition has not occurred impliedly recites that the credit card number remains active. It is respectfully submitted that the Walker et al. patent fails to teach or suggest these claimed features, whether considered alone or in any combination with the Nakagawa patent.

The Walker et al. patent is directed to a method and a device for generating a single-use, transaction specific financial account number. (See, column 1, lines 6-8.) According to the Walker et al. patent, single use credit card numbers are stored in encrypted form within the memory of a smart card device (see, column 5, lines 49-55). When a user using the smart card device wishes to perform a transaction, the user enters a PIN number or biometric data to access the device (see, column 6,

lines 14-20). If access is granted, the device response by querying the user as to whether he/she wants to generate a single use credit card number and optionally asks the user for the purchase amount or a merchant code (see, column 6, lines 20-26). The numbers can be transaction specific to a particular merchant, amount of purchase, or date and time. However, as pointed out above, each number in the Walker et al. system may be used only once.

There is no suggestion in the Walker et al. patent concerning any multiple use of a credit card number that is subject to deactivation upon a use-triggered condition, as claimed. In one embodiment, Walker et al. generates each number using a user-controlled device that increments an initialization variable used to form the number. Each initialization variable of a credit card number used in a transaction is stored in a credit card transaction database to prevent against "replay" attacks. (See, column 7, lines 42-51, column 10, lines 10-21). Another way Walker et al. attempts to prevent a credit card number being used more than once involves a processor in the device updating, when a credit card number is approved for a transaction, a status indicator in a credit card database memory from "not used" to "used." (See, column 11, lines 59-62 and column 12, lines 39-44.) Hence, in addition to not teaching a limited-use credit card permitting *multiple uses*, as recited in claims 1, 14 and 15, the credit card system disclosed in the Walker et al. patent actually "teaches away" permitting more than one use.

Walker et al. similarly teaches away from the possibility of the card remaining active for at least one additional transaction if it is determined during use of the card that a use-triggered condition has not occurred, as recited in claims 17 and 20. In contrast, Walker et al. discloses that "each record in the database corresponds to one transaction using the card" (emphasis added) (column 7, lines 38-39 and column 12, lines 10-11) and includes either an initialization variable (column 7, lines 42-45) or status of "'used' or 'not used'" (column 12, lines 14-15). According to Walker et al., if the status associated with a single-use card is determined to be "used" (i.e., the number has been used in a previous transaction) or represents an initialization variable previously used (column 8, lines 47-50), the number is considered no longer

valid (column 8, lines 50-52 and column 12, lines 34-38). Hence, the single-use card described in Walker et al. is *a/ways* deactivated after use in only one transaction.

On page 2, section 2 of the Office Action, the Examiner states that "Walker et al. shows all of the limitations of the claims except for use-triggered deactivation." However, as pointed out above, the Walker et al. patent fails to teach or suggest other features recited in the claim 1, 14, 15, 17 and 20 combinations. The Examiner goes on to state that the Nakagawa patent allegedly teaches in Figure 11 a stage in which a rental contract is terminated and that it would have been obvious to modify the Walker et al. system to incorporate the card cancellation method of Nakagawa¹ in order to settle up expenses. It is respectfully submitted, however, that the method described in the Nakagawa patent does not relate to the credit card system disclosed in Walker et al., and as a result, does not teach or suggest the shortcomings pointed out above with respect to Walker et al.

The Nakagawa patent is directed to a credit card-based *accounting service* for mobile phones (see column 1, lines 9-11 and column 2, lines 38-43). According to Nakagawa, when a prospective user wishes to enter into the rental contract, the user will use a data terminal to send in his/her credit card number along with an accounting service registration (column 9, lines 20-39). If the card is found legal, the accounting service stores the credit card member number 56 and a subscriber number 56 as a pair in a database 40 of a service control unit 32 (which renders the accounting service in intelligent network 10) (see, Figure 1, column 6, lines 17-33 and column 7, lines 30-32). After registration, communication expenses are calculated once a month and are billed to the credit card company (Figure 8 and column 10, lines 33-52). Thus, a user of the accounting service described in the Nakagawa patent uses his/her a credit card to establish an account and have the expenses automatically billed to the credit card company. However, Nakagawa is silent with respect to limited-use credit cards having a use-triggered deactivation feature as claimed. Cancellation as described with reference to Figure 10 does not

¹ Line 16 of page 3 mentions "the teaching of Austin," but it is believed the Examiner intended to refer to "Nakagawa" instead of "Austin."

pertain to cancellation of the credit card, as alleged in the Office Action in the last line of section 2. Rather, it is cancellation of the credit card member number 56 from the database 40 of the system. Indeed, the user's credit card remains valid after cancellation from the database because the credit card company is billed after that time for expenses (column 11, lines 62-63).

Hence, even if one were to consider for the sake of argument that one of ordinary skill in the art would have been motivated to somehow combine these disparate documents, such hypothetical combination would not have resulted in the combinations of features set forth in independent claims 1, 14, 15, 17 and 20. For instance, the Nakagawa patent would not have taught or suggest the combination of features set forth in claims 1, 14, and 15 missing in the Walker et al. document, which include a limited-use credit card number with limited use conditions in which the conditions include permitting multiple-uses and a use-triggered condition, the occurrence of which causes *deactivation* of the limited-use credit card number. The proposed combination also would not have taught or suggested determining whether to deactivate the limited-use credit card number determines whether a use-triggered condition associated with permitted use of said limited-use credit card number has occurred, and if so, generating a deactivation command when said limited-use event has occurred, and if not, not generating said deactivation command, as recited in independent claims 17 and 20.

Moreover, it would appear that one of ordinary skill in the art would not have been led to use a single use credit card as described in the Walker et al. patent within the intelligent network system of Nakagawa because, after the very first charge on the credit card, the card would become invalid for any additional use, thus rendering the service of Nakagawa inoperable for its intended purpose.

For at least these reasons, the rejection fails to establish a *prima facie* case of obviousness with respect to claims 1, 14, 15, 17 and 20. As such, the rejection is improper and should be reversed.

B. Claim 21 Recites a Combination of Features Not Taught or Suggested in the Walker et al. and Nakagawa Patents

Independent claim 21 recites that a credit card system comprises, *inter alia*, “means for receiving information from said user, said information specifying limited uses for *the limited-use credit card number*, said uses including said use-triggered condition.” By contrast, the Walker et al. describes a system in which a single-use, transaction specific credit card number is generated only *after* the cardholder submits transaction specific information. (See, column 6, lines 17-18, 25-27 and 30-33.) That is, to the extent that the Walker et al. patent describes a cardholder providing information defining a use of a single-use credit card number, it is in the context of providing transaction-specific information (i.e., a purchase amount and a merchant code number), which is *then* used by the smart card device to *generate* a credit card number unique to the user-provided information (i.e., the information must be provided *before* the number is generated). The Walker et al. patent, therefore, neither teaches or suggests means for receiving information from a user that defines a limited use for a number *before that number* is used in a transaction pertaining to the defined limited use, as claimed, because the number used in a transaction of the Walker et al. system does not yet exist when providing this information.

The examiner acknowledges that the Walker et al. patent does not teach or suggest use-triggered deactivation. However, as pointed above, Walker et al. also fails to teach or suggest receiving information from a user that defines a limited use for a number *before that number* is used in a transaction pertaining to the defined limited use.

The Nakagawa patent does not remedy the above shortcomings of Walker et al. As pointed out above, the Nakagawa patent disclosure is unrelated to limited-use credit cards, and thus also deactivation of a limited-use credit card number upon a use-triggered subsequent, as claimed, because in the Nakagawa system the credit card number itself is not canceled during the contract termination stage. Hence, Nakagawa does not teach or suggest use-triggered deactivation, as alleged in the Office Action, and moreover, the means for receiving information from a user

specifying limited uses and a use-triggered condition. The rejection, therefore, fails to establish a prima facie case of obviousness.

For at least these reasons, the rejection of claim 21 should be reversed.

C. The Proposed Combination of Walker et al. and Nakagawa Fails to Teach or Suggest Each and Every Limitation of Independent Claims 39 and 44

Independent claims 39 and 44 are respectively directed to a credit card system and method for implementing a credit card system which include a first queue of limited-use credit card numbers, each available for association with one master credit card number, and second queue containing assigned master credit card numbers requiring association with limited-use credit card numbers. Claims 39 and 44 further require associating, for each master credit card number at the front of the second queue, one or more limited-use credit card numbers for the first queue, wherein the one or more limited-use credit card numbers associated with a same master credit card at different times when the same master credit card number reaches the front of the second queue are random with respect to one another. For example, as described in specification, at page 20, lines 10-27, the allocation of credit card numbers from a list to a customer in a queue of customers requiring numbers provides randomness, which prevents the derivation or prediction of a next set of numbers that a particular credit card holder will be allocated. With respect to these claimed features, the Office Action mentions only that “[t]he [Walker et al.] system maintains a queue of available limited use credit card numbers.” (See, page 3, lines 6-7. The Action does not otherwise point to any part(s) of the Walker et al. and Nakagawa patents that would have taught or suggested the combination of the specific features mentioned above that relate to associating numbers, as set forth in claims 39 and 45. Appellants further submit that these documents do not teach or suggest anything whatsoever concerning maintaining a first and second queue and associating numbers contained therein as claimed.

As pointed out above, the Nakagawa patent does not relate to limited-use credit cards, and thus Nakagawa also does not relate to associating limited-use credit card numbers to master credit card numbers as claimed. Thus, even when

combining this document with Walker et al., as suggested by the Examiner, the Walker et al. and Nakagawa combination would not have taught or suggested each and every feature set forth in claims 39 and 45.

Moreover, one of ordinary skill in the art would not have been led to make such a modification for reasons pointed out above regarding inoperability.

For at least these reasons, the rejection of claims 39 and 45 fails to establish a *prima facie* case of obviousness. As such, the rejection should be reversed.

D. The Walker et al. and Nakagawa Patents Fail to Teach or Suggest All the Features Recited in Independent Claim 51

Claim 51 recites that a credit card system includes, *inter alia*, a receiving unit for receiving information from a user of said master credit card and that the information defines at least one limited use of said limited-use credit card number, before using said limited use card number in a transaction pertaining to said defined limited use. In contrast, the Walker et al. patent describes a system in which a single-use, transaction specific credit card number is generated only *after* the cardholder submits transaction specific information. (See, column 6, lines 17-18, 25-27 and 30-33.) That is, to the extent that the Walker et al. patent describes a cardholder providing information defining a use of a single-use credit card number, it is in the context of providing transaction-specific information (i.e., a purchase amount and a merchant code number), which is *then* used by the device 100 to *generate* a credit card number unique to the user-provided information (i.e., the information must be provided *before* the number is generated). The Walker et al. patent, therefore, neither teaches or suggests that a user defines a limited use for a number *before that number* is used in a transaction pertaining to the defined limited use, as claimed, because the number used in a transaction of the Walker et al. system does not yet exist when providing this information.

The Nakagawa patent likewise does not teach or suggest the claimed features of a receiving unit. In contrast, Nakagawa appears only to describe a master credit card, which is used to establish an accounting service contract. Hence, the credit card described in Nakagawa does not relate to limited use-credit

cards, much less the claimed receiving unit for receiving information from a user of the master credit card and that the information defines at least one limited use of the limited-use credit card number, before using said limited use card number in a transaction pertaining to said defined limited use.

Furthermore, as pointed out above, it appears that the proposed modification would have resulted in an impractical, if not unworkable system because the Walker et al. credit card number can be used in only one transaction. Hence, one of ordinary skill in the art would not have looked to Nakagawa to make the modification of Walker et al. suggested in the Office Action. Conversely, one of ordinary skill in the art would not have modified the single-use credit card number Walker et al. to permit for more than one transaction per credit card number because doing so would increase the probability for replay attacks, which Walker et al. expressly wishes to avoid.

Because the proposed combination Walker et al. and Nakagawa patents would not have taught or suggested the combination each and every claimed feature, and motivation would have been lacking for making such a combination, the rejection of claim 51 should be reversed.

E. The Remaining Dependent Claims

The rejection of dependent claims 2-13, 18, 19, 28-38, 40-44, 46-50 and 52-56 should be reversed, if for no other reasons than they each depend from one of independent claims 1, 17, 21, 39, 45 and 51. In addition, the dependent claims recite additional features defining further points of distinction not taught or suggested by the Walker et al. and Nakagawa patents.

VIII. Conclusion

For all the foregoing reasons, Appellants respectfully submit that the rejection under Section 103 of claims 1-15, 17-21 and 28-56 is in error because the Examiner has failed to establish a *prima facie* case of obviousness. Accordingly, the rejection of all claims should be reversed.

Respectfully submitted,

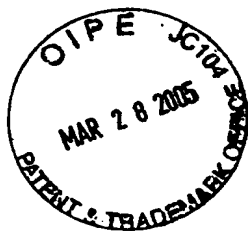
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Date: March 28, 2005

Table of Contents



CLAIMS APPENDIX

The Appealed Claims

Claim 1: A credit card system, comprising:

means for maintaining a pool of credit card numbers which share identical formatting;

means for assigning at least one credit card number from said pool of credit card numbers to be a master credit card number;

means for assigning at least one credit card number from said pool of credit card numbers to be a limited-use credit card number;

means for associating said at least one limited-use credit card number with limited-use conditions, said conditions including permitting multiple uses and a use-triggered condition, the occurrence of which causes deactivation of said limited-use credit card number; and

means for associating said master credit card number with said limited-use credit card number, while ensuring that said master credit card number cannot be discovered on the basis of said limited-use credit card number.

Claim 2: The credit card system of claim 1, further comprising:

means for receiving notification that said limited-use credit card number has been used in a credit card transaction;

means for determining whether a use-triggered condition has occurred based on said notification, and if so, generating a deactivation command; and

means for deactivating said limited-use credit card if said use-triggered condition has occurred.

Claim 3: The credit card system of claim 2, wherein said use-triggered condition is satisfied when said limited-use credit card is used a predetermined number of times.

Claim 4: The credit card system of claim 2, wherein said use-triggered condition is satisfied when said limited-use credit card is used to accrue charges which are greater than a prescribed monetary amount.

Claim 5: The credit card system of claim 2, further comprising:
means for assigning another limited-use credit card number in response to said deactivation command, and associating said other limited-use credit card number with said master credit card number.

Claim 6: The credit card system of claim 5, wherein said system maintains a queue of available limited-use credit card numbers, and said means for assigning said other limited-use credit card number selects said other limited-use credit card number from said queue.

Claim 7: The credit card system of claim 1, further comprising means for receiving a request for another limited-use credit card number from a user, and in response thereto, assigning another limited-use credit card number.

Claim 8: The credit card system of claim 7, wherein said system maintains a queue of available limited-use credit card numbers, and said other limited-use credit card number is selected from said queue.

Claim 9: The credit card system of claim 1, wherein said system includes transmission means for downloading said limited-use credit card number to a user.

Claim 10: The credit card system of claim 9, wherein said limited-use credit card number is encrypted prior to downloading.

Claim 11: The credit card system of claim 1, wherein said system includes dispensing means for dispensing a credit card containing said limited-use credit card number to a user.

Claim 12: The credit card system of claim 11, wherein said dispensing means comprises an automated teller machine.

Claim 13: The credit card system of claim 11, wherein said dispensing means comprises a printing means for printing out an indication of said limited-use credit card number for delivery to said user.

Claim 14: A computer-readable medium having embodied thereon a computer program executable on a computer for implementing for a credit card system comprising:

maintaining a pool of credit card numbers which share identical formatting;
assigning at least one credit card number from said pool of credit card numbers to be a master credit card number;

assigning at least one credit card number from said pool of credit card numbers to be a limited-use credit card number;

associating said at least one limited-use credit card number with limited-use conditions, said conditions including permitting multiple uses and a use-triggered condition, the occurrence of which causes deactivation of said limited-use credit card number; and

associating said master credit card number with said limited-use credit card number, while ensuring that said master credit card number cannot be discovered on the basis of said limited-use credit card number.

Claim 15: A computer program resident in physical signals transmitted over a transmission medium, said computer program executable on a computer for use in a credit card computer system, comprising:

maintaining a pool of credit card numbers which share identical formatting;

assigning at least one credit card number from said pool of credit card numbers to be a master credit card number;

assigning at least one credit card number from said pool of credit card numbers to be a limited-use credit card number;

associating said at least one limited-use credit card number with limited-use conditions, said conditions including permitting multiple uses and a use-triggered condition, the occurrence of which causes deactivation of said limited-use credit card number; and

associating said master credit card number with said limited-use credit card number, while ensuring that said master credit card number cannot be discovered on the basis of said limited-use credit card number.

Claim 17: A credit card system for performing a credit card transaction based on one of a master credit card number or a limited-use credit card number, wherein said limited-use credit card number is randomly chosen with respect to said master credit card number, but said limited-use credit card number includes identical formatting to said master credit card number and is associated with said master credit card number, said system comprising:

transaction means for entering a transaction on the basis of said master credit card number or said limited-use credit card number to generate a transaction message;

processing means for receiving said transaction message and processing said transaction, including:

means for authorizing or denying said transaction;

means for determining whether to deactivate the limited-use credit card number when said limited-use credit card number was used to perform the transaction, and for generating a deactivation command in response thereto, wherein said means for determining whether to deactivate the limited-use credit card number determines whether a use-triggered condition associated with permitted use of said limited-use credit card number has occurred, and if so, generates said deactivation command when said limited-use event has occurred, and if not, does not generate said deactivation command; and

means for deactivating the limited-use credit card number based on the deactivation command.

Claim 18: The credit card system of claim 17, wherein said use-triggered condition is satisfied when said limited-use credit card is used only once.

Claim 19: The credit card system of claim 17, wherein said use-triggered condition is satisfied when said limited-use credit card is used to accrue charges which are greater than a prescribed monetary amount.

Claim 20: A method for performing a credit card transaction based on one of a master credit card number or a limited-use credit card number, wherein said limited-use credit card number having no mathematical relationship with respect to with said master credit card number, but said limited use credit card number includes identical formatting to said master credit card number and is associated with said master credit card number, said method comprising:

- entering a transaction on the basis of said master credit card number or said limited-use credit card number to generate a transaction message;

- receiving said transaction message and processing said transaction, including:

 - authorizing or denying said transaction;

 - determining whether to deactivate the limited-use credit card number when said limited-use credit card number was used to perform the transaction, and generating a deactivation command in response thereto, wherein said determining step determines whether a use-triggered condition associated with permitted use of said limited-use credit card number has occurred, and if so, generates said deactivation command, and if not, does not generate said deactivation command;

and

deactivating the limited-use credit card number based on the deactivation command.

Claim 21: A credit card system, comprising:

a database of credit card numbers which share identical formatting;

a master credit card number selector that can select at least one credit card number from said database to be a master credit card number;

a limited-use credit card number selector that can select a least one credit card number from said database to be a limited-use credit card number that is deactivated upon a use-triggered condition subsequent;

a credit card number processor that can associate said master credit card number with said limited-use credit card number, while ensuring that said master credit card number cannot be discovered on the basis of said limited-use credit card number;

a credit card number distributor that can send said limited-use credit card number to a user associated with said master credit card number; and

means for receiving information from said user, said information specifying limited uses for the limited-use credit card number, said uses including said use-triggered condition.

Claim 28: The credit card system of claim 1, wherein at least one of said limited use conditions is one or more selected from a group consisting of a specific time period, a specific merchant, a specific group of merchants, a specific type of transaction, and a specific number of transactions.

Claim 29: The credit card system of claim 1, comprising:
means for delivering said limited-use credit card number to a user associated with said master credit card number; and
means for receiving information from said user designating at least one of said limited-use conditions.

Claim 30: The credit card system of claim 29, wherein said means for delivering comprises transmission means for downloading said limited-use credit card number to the user.

Claim 31: The credit card system of claim 1, wherein said limited-use conditions include limiting the limited-use credit card number to a predetermined number of payments for a transaction with a single merchant.

Claim 32: The credit card system of claim 1, wherein a card issuer specifies at least one of said limited-use conditions.

Claim 33: The credit card system of claim 1, wherein a card user specifies at least one of said limited-use conditions.

Claim 34: The credit card system of claim 21, wherein said specified use-triggered condition is satisfied when said limited-use credit card is used only once.

Claim 35: The credit card system of claim 21, wherein said specified limited uses permit multiple transactions until said use-triggered condition is satisfied.

Claim 36: The credit card system of claim 21, wherein said use-triggered condition is satisfied when charges accrued by the limited-use credit card number exceed at least one predetermined threshold selected from a total single charge, total charges over a limited time period, and total charge in a single transaction.

Claim 37: The credit card system of claim 21, wherein said specified limited uses include limiting the limited-use credit card number to transactions with a single merchant.

Claim 38: The credit card system of claim 21, wherein said specified limited uses include limiting the limited-use credit card number to transactions with a specific merchant as determined by first use.

Claim 39: A credit card system, comprising:

- means for maintaining a pool of credit card numbers which share identical formatting;
- means for assigning a number of said credit card numbers from said pool to be master credit card numbers;
- means for assigning a number of said credit card numbers from said pool to be limited-use credit card numbers, each of which are designated to be deactivated upon a use-triggered condition;
- means for maintaining a first queue of the limited-use credit card numbers, each available for association with one of the assigned master credit card numbers;

means for maintaining a second queue containing assigned master credit card numbers requiring association with limited-use credit card numbers; and

means for associating, for each master credit card number at the front of the second queue, one or more limited-use credit card numbers from the first queue, wherein said one or more limited-use credit card numbers associated with a same master credit card at different times when the same master credit card number reaches the front of the second queue are random with respect to one another.

Claim 40: The credit card system of claim 39, wherein said use-triggered condition is satisfied when said limited-use credit card is used only once.

Claim 41: The credit card system of claim 39, wherein said limited-use credit card number is designated for multiple uses until said use-triggered condition is satisfied.

Claim 42: The credit card system of claim 39, wherein said use-triggered condition is satisfied when charges accrued by the limited-use credit card number exceed at least one predetermined threshold selected from a total single charge, total charges over a limited time period, and total charge in a single transaction.

Claim 43: The credit card system of claim 39, wherein said limited-use credit card is limited to transactions with a single merchant.

Claim 44: The credit card system of claim 39, wherein said limited-use credit card number is limited to transactions with a specific merchant as determined by first use.

Claim 45: A method of implementing a credit card system, comprising:
maintaining a pool of credit card numbers which share identical formatting;
assigning a number of said credit card numbers from said pool to be master credit card numbers;
assigning a number of said credit card numbers from said pool to be limited-use credit card numbers, each of which are designated to be deactivated upon a use-triggered condition;
maintaining a first queue of the limited-use credit card numbers each available for association with one of the plurality of master credit card numbers;
maintaining a second queue containing ones of said master credit card numbers users requiring association with limited-use credit card numbers; and
associating, for each master credit card number at the front of the second queue, one or more limited-use credit card numbers from the first queue, wherein said one or more limited-use credit card numbers associated with a same master credit card at different times when the same master credit card number reaches the front of the second queue are random with respect to one another.

Claim 46: The method of claim 45, wherein said use-triggered condition is satisfied when said limited-use credit card is used only once.

Claim 47: The method of claim 45, wherein said limited-use credit card number is designated for multiple uses until said use-triggered condition is satisfied.

Claim 48: The method of claim 45, wherein said use-triggered condition is satisfied when charges accrued by the limited-use credit card number exceed at least one predetermined threshold selected from a total single charge, total charges over a limited time period, and total charge in a single transaction.

Claim 49: The method of claim 45, comprising limiting said limited-use credit card to transactions with a single merchant.

Claim 50: The method of claim 45, comprising limiting said limited-use credit card number to transactions with a specific merchant as determined by first use.

Claim 51: A credit card system, comprising:

- a database of credit card numbers which share identical formatting;
- a master credit card number assigner for assigning at least one credit card number from said database to be a master credit card number;
- a limited-use credit card number assigner for assigning a least one credit card number from said database to be a limited-use credit card number, which is designated to be limited to one or more limited uses;
- a credit card number processor for associating said master credit card number with said limited-use credit card number, while ensuring that said master credit card number cannot be discovered on the basis of said limited-use credit card number; and

a receiving unit for receiving information from a user of said master credit card, said information defining at least one said limited use of said limited-use credit card number, before using said limited use card number in a transaction pertaining to said defined limited use.

Claim 52 (previously presented): The credit card system of claim 51, wherein said defined limited use limits use of said limited-use credit card to only one use.

Claim 53: The credit card system of claim 51, wherein said defined limited use designates said limited-use credit card number for multiple uses until deactivation upon occurrence of a use-triggered condition.

Claim 54: The credit card system of claim 53, wherein said use-triggered condition is satisfied when charges accrued by the limited-use credit card number exceed at least one predetermined threshold selected from a total single charge, total charges over a limited time period, and total charge in a single transaction.

Claim 55: The credit card system of claim 51, wherein said defined limited use limits use of the limited-use credit card to transactions with a single merchant.

Claim 56: The credit card system of claim 51, wherein said defined limited use limits use of the limited-use credit card to transactions with a specific merchant as determined by first use.

IX. EVIDENCE APPENDIX

(None)

X. RELATED PROCEEDINGS APPENDIX

(None)

